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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,876	12/11/2001	Zheng Chen	7016.02.01	2359

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EXAMINER

NGUYEN, DANNY

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,876

Applicant(s)

CHEN, ZHENG

Examiner

Danny Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-14,16-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-14,16-18 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 9, 16 have been considered but are moot in view of the new ground(s) of rejection.
2. Claims 6, 15, 19 are cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishino et al in view of Nakazawa et al (USPN 6.671.165).

Regarding to claim 1, Nishino et al. disclose a double layer capacitor (fig. 10) comprises a cathode and an anode coating of amorphous metal oxide (such as col. 15, lines 11-15), a substrate layer (the electrolyte soaked separator 19) containing an electrolyte disposed between the cathode and anode, first and second current collectors (a pair of current collectors 18 shown in fig. 10) disposed, respectively, adjacent the outer surfaces of the electrodes (23), and a metallic coating (such as layer 22 shown in fig. 10) interposed between the current collector and the electrode to reduce the contact resistance in the double-layer capacitor (e.g. col. 9, lines 32-51), the metallic coating being selected from Aluminum (see col. 7, lines 60-64). Nishino does not disclose a

conductive rubber layer disposed on the surface of each electrode. Nakazawa discloses an electric double layer capacitor (see fig. 1) comprises the current collectors (6) is coated by conductor rubber layers (5) on the both surfaces of the collector (6) so that the conductive layer contacts to the surface of the electrodes (2) in order to reduce the ESR of the capacitor (e.g. see col. 2 and 3, lines 55-7 and col. 8, lines 25-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the electric double layer capacitor of Nishino to incorporate the conductive rubber layers as taught by Nakazawa because Nakazawa teaches that using the conductive rubber layers (5) is to reduce the ESR of the capacitor.

Regarding claims 2, 3, 13, 14, Nishino discloses the metal oxide comprises ruthenium oxide (col. 15, lines 11-15).

Regarding claim 5, Nishino discloses the metallic coating is approximately 0.0025-.01 mm thick (see col. 13, lines 44-45).

Regarding claims 7, 8, 11, 18, Nishino discloses the electrolyte is a liquid, which comprises sulfuric acid (col. 2, lines 9-10).

Regarding to claims 9, 10, 12, 16, 17, Nishino et al. disclose a plurality of stacked capacitor cells (see fig. 10 and 24), each cell (such as cell 40) including a pair of electrodes (a pair of electrodes 37) coated with a amorphous metal oxide (such as col. 15, lines 11-15)) and being separated by an electrolyte soaked layer (an electrolyte soaked separator 39), the stack of cells having first and second end surfaces (the surfaces of the pair of the electrodes 37), first and second current collectors (a pair of current collectors 18 shown in fig. 10) (a pair of current collectors 18 shown in fig. 10)

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disposed, respectively, adjacent the outer surfaces of the electrodes (23), and a metallic coating (such as layer 22 shown in fig. 10) approximately 0.0025-0.1000 mm thick (see col. 13, lines 44-45) and is selected from Aluminum (see col. 7, lines 60-64), interposed between the current collector and the electrode to reduce the contact resistance and the internal resistance in the double-layer capacitor (e.g. col. 9, lines 32-51). Nishino does not disclose a conductive rubber layer disposed on the surface of each electrode.

Nakazawa discloses an electric double layer capacitor (see fig. 1) comprises the current collectors (6) is coated by conductor rubber layers (5) on the both surfaces of the collector (6) so that the conductive layer contacts to the surface of the electrodes (2) in order to reduce the ESR of the capacitor (e.g. see col. 2 and 3, lines 55-7 and col. 8, lines 25-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the electric double layer capacitor of Nishino to incorporate the conductive rubber layers as taught by Nakazawa because Nakazawa teaches that using the conductive rubber layers (5) is to reduce the ESR of the capacitor.

4. Claims 4, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishino in view of Nakazawa and further in view of Bai et al. (USPN 5,872,698). The combination of Nishino and Nakazawa disclose all limitations of claims 1 and 16 except for using the amorphous hydrated ruthenium oxide to coat the electrode. Bai discloses electrodes (22 and 42) coated with the amorphous hydrated ruthenium oxide. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified to the capacitor of the combination to use a amorphous

hydrated ruthenium oxide to coat electrodes because it provides relatively long life and a high power (Bai, col. 1, lines 25-29).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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4/1/2004



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